

Curriculum Vitae

Name: Julia Bohannon, Ph.D.
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Education and Training

1999 – 08/2003 B.S., Biology, with an option in Microbial, Cellular, and Molecular, Eastern Kentucky University, Richmond, KY.
2005 – 5/2011 Ph.D., Major in Microbiology and Immunology, University of Texas Medical Branch, Galveston, TX.
2011 – 5/2012 Postdoctoral Certificate in Teaching and Mentoring and Postdoctoral Certificate in Critical Research Skills, Graduate School of Biomedical Sciences, University of Texas Medical Branch, Galveston, TX.
Postdoctoral Certificate in Critical Research Skills, Graduate School of Biomedical Sciences, University of Texas Medical Branch, Galveston, TX.
2012 – 12/2014 Postdoctoral Research Fellow, Anesthesiology Research Division, Vanderbilt University, Nashville, TN.
2014 – 12/2015 NRSA Postdoctoral Trainee, Anesthesiology Research Division, Vanderbilt University, Nashville, TN.

Professional Experience

2018 – Present Assistant Professor of Anesthesiology, Basic Science Investigator Track, Vanderbilt University Medical Center, Nashville, TN.
2019 – Present Assistant Professor of Pathology, Microbiology, and Immunology, Secondary Appointment, Vanderbilt University Medical Center, Nashville, TN.
2015 – 2017 Research Assistant Professor, Anesthesiology Research Division, Vanderbilt University Medical Center, Nashville, TN.

Grants and Funding

Completed:

1/2014 – 12/2014 F32 GM110811 NIGMS/NIH
Title: The Effect of MPLA Treatment on Immune Responses to Infection after Severe Burn.
The major goal of this study was to define the cellular and molecular mechanisms responsible for the protective effect afforded by the TLR4 agonist lipid A to a lethal burn wound infection.
Role: PI – 100% effort

1/2015 – 5/2017 R01 GM104306 NIGMS/NIH (PI: Edward Sherwood)
Title: Augmentation of Innate Anti-Microbial Immune Function by TLR4 Agonists.
The major goal of this study is to define the cellular and molecular mechanisms that underlie the ability of the TLR4 agonist monophosphoryl lipid A to augment innate anti-microbial immune functions.
Role: Co-Investigator – 50% effort 1/2015-4/2016; 25% effort 5/2016-5/2017

5/2016 – 1/2017 VUMC Faculty Scholars Award
Title: Enhancing resistance to infection after burn injury with TLR agonists

The major goal of this study is to identify potential immunomodulatory strategies as a means of offering protection against infection after severe burn injury.
Role: PI – 75% effort

4/2016 – 1/2020 R01 GM119197 NIGMS/NIH (PI: David Williams/Edward Sherwood)
Title: Training innate immunity: A new approach to the treatment of sepsis
The major goal of this study is to characterize the phenomenon of innate immune system training after exposure to dectin-1 ligands.
Role: Co-Investigator - 24% effort

Active:

2/2017 – 1/2022 R01 GM121711 NIGMS/NIH (PI: Julia Bohannon)
Title: Enhancing Resistance to Infection after Burn Injury with TLR Agonists
The long-term goal of this project is to better understand the distinct roles of MyD88- and TRIF-dependent signaling during immunomodulation with toll-like receptor agonists.
Role: PI – 50% effort

2/2020 – 1/2025 R01 AI151210 NIAID/NIH (PI: Edward Sherwood)
Title: Macrophage mitochondrial reprogramming and innate immune memory
The primary goal of this project is to advance our understanding of the cellular and molecular immunology that underlies innate immune memory and harness unique ligands as drug products to improve host resistance to infection.
Role: Co-Investigator – 10% effort

Pending:

7/2020 – 6/2021 RC190010
Department of Defense Combat Readiness-Medical Research Program (CRM RP), Rapid Development and Translational Research Award.
Title: Enhancing Resistance to Post-Burn Infections with Toll-like Receptor Agonists.
The major goal of this study is to advance the TLR4 agonist 3D-PHAD, as a first-generation, low-volume fluid adjunct capable of restoring post-trauma immune responses, and to study the synergistic combination of TLR4 and TLR8 agonists to lay the foundation for a second-generation product.
Role: PI – 25% effort

Professional Organizations and National Committees

The American Association of Immunologists, regular member
Society for Leukocyte Biology, member
The Shock Society, member
Elliot Newman Society, member
The International Endotoxin and Innate Immunity Society (IEIIS), member
American Burn Association, member

Awards / Honors

Awards

2005 Toxicology Scholars Award, UTMB
2008 NIEHS Pre-doctoral Fellowship (T32-ES07254) (2008-2010)
2009 GSBS Associates Scholarship, UTMB
2010 Edith and Robert Zinn Presidential Scholarship, UTMB
2011 McLaughlin Postdoctoral Fellowship, UTMB (2011-2012)
2014 NRSA F32 Postdoctoral Training Fellowship Award (F32-GM110811-01A1) (2014-2015)
2015 Best poster presentation award, 11th Annual Anesthesiology Research Symposium, Vanderbilt University
2016 Vanderbilt University Medical Center Faculty Clinical and Translational Research Scholars Award (2016-2017)
2017 G. Jeanette Thorbecke Award, Society of Leukocyte Biology

2018 College of Science Award, Eastern Kentucky University, College of Science
2018 Professional Achievement Award, Eastern Kentucky University

Selected Conference Abstracts

2013 Selected oral presentation, 36th Annual Conference on Shock, San Diego, CA.
2014 Selected plenary oral presentation, top abstract, 37th Annual Conference on Shock, Charlotte, NC.
2015 Invited oral presentation 38th Annual Conference on Shock, Denver, CO.
2017 Selected for plenary oral presentation, top abstract, Innate Immune Memory Conference 2017, Cambridge, UK.
2107 Selected for plenary oral presentation, "Best of the Best" top abstract, 40th Annual Conference on Shock, Ft. Lauderdale, FL.
2017 Selected Thorbecke Awardee Presentation, Senior Awards Session, 50th Annual Meeting of SLB, Vancouver, BC
2018 Selected for oral presentation, top abstract, Joint Meeting of SLB & IEIIS 2018, Chandler, AZ.
2019 Selected for oral presentation, top abstract, Military Health Systems Research Symposium 2019, Kissimmee, FL.
2019 Selected oral presentation, INTRIM Consortium Meeting – 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands.

Manuscript Recognitions

2013 Manuscript figure selected for cover of *SHOCK Journal*, December issue
2016 Manuscript selected by the *Journal of Leukocyte Biology* for press release
2018 Manuscript figure selected for cover of *Journal of Immunology*, June issue
2018 Manuscript highlighted as top 10% of articles published in June 2018 issue of the *Journal of Immunology*

Publications

1. McBride MA, Owen AM, Stothers CL, Hernandez A, Luan L, Burelbach KR, Patil TK, **Bohannon JK**, Sherwood ER, Patil NK. The metabolic basis of immune dysfunction following sepsis and trauma. *Front Immunol.* 2020 May 29; Epub ahead of print. PMID: 325475553.
2. Hernandez A, Patil NK, Stothers C, Luan L, McBride MA, Owen AM, Burelbach KR, Williams DL, Sherwood ER, **Bohannon JK**. Immunobiology and application of toll-like receptor 4 agonists to augment host resistance to infection. *Pharmacol. Res.* 2019 Nov 2; Epub ahead of print. PMID: 31689522.
3. Hernandez A, Luan L, Stothers C, Fults JB, Fensterheim BA, Patil NK, Guo Y, Wang J, Sherwood ER, **Bohannon JK**. Phosphorylated hexaacetyl disaccharides augment host resistance against common nosocomial pathogens. *Crit. Care Med.* September 17, 2019. Volume Online First–Issue–p. doi: 10.1097/CCM.0000000000003967.
4. Fukuda S, Ihara K, **Bohannon JK**, Hernandez A, Patil N, Luan L, Stothers C, Stark R, Prough DS, Herndon DN, Sherwood ER, Enkhbaatar P. Monophosphoryl lipid A attenuates multiorgan dysfunction during post-burn *Pseudomonas aeruginosa* pneumonia in sheep. *SHOCK.* 2019 Apr 26; Epub ahead of print. PMID: 31045990.
5. Patil NK, **Bohannon JK**, Hernandez A, Patil TK, Sherwood ER. Regulation of leukocyte function and inflammation by citric acid cycle intermediates. *J Leukoc Biol.* 2019 Feb 21; Epub ahead of print. PMID: 30791134.
6. Patil NK, **Bohannon JK**, Sherwood ER. Metabolism drives monocytes during activation and resolution of acute inflammation: What we do and don't know. *J Leukoc Biol.* 2019 Jan 7; Epub ahead of print. PMID: 30618209.

7. Stothers, CL, Luan L, Fensterheim BA, **Bohannon JK**. Hypoxia-inducible factor-1 α regulation of myeloid cells. *J Mol Med*. 2018 Dec; 96(12): 1293-1306. PMID: 30386909. PMCID: PMC6292431.
8. **Bohannon JK**, Sherwood ER. What's New in Shock, July 2018? *Shock*. 2018 Julv; 50(1):1-4. PMID: 29889806.
9. Fensterheim BA, Young JD, Luan L, Kleinbard R, Stothers C, Patil N, McAtee A, Guo Y, Trenary I, Fults JB, Sherwood ER, **Bohannon JK**. The TLR4 agonist monophosphoryl lipid A drives broad resistance to infection via dynamic reprogramming of macrophage metabolism. *J Immunol*. 2018 June 1; 200: 3777-3789. PMID: 29686054 PMCID: PMC5964009. ***Manuscript figure selected for cover of *Journal of Immunology*, June issue. *Manuscript highlighted as top 10% of articles published in June 2018 issue of the *Journal of Immunology***
10. Patil NK, Luan L, **Bohannon JK**, Hernandez A, Guo Y, Sherwood ER. Frontline Science: Anti-PD-L1 protects against infection with common bacterial pathogens after burn injury. *J Leukoc. Biol*. 2018 Jan 8; 103(1):23-33. PMID: 29345058.
11. Guo Y, Patil NK, Luan L, **Bohannon JK**, Sherwood ER. The biology of natural killer cells during sepsis. *Immunology*. 2018 Feb; 153(2):190-202. PMID: 29064085. PMCID: PMC5765373.
12. Fensterheim, BA, Guo Y, Sherwood ER, **Bohannon JK**. The cytokine response to LPS does not predict the host response to infection. *J Immunol*. 2017 Apr 15; 198(8): 3264-3273. PMID: 28275139. PMCID: PMC5380530.
13. Bae L, **Bohannon JK**, Cui W, Vinish M, Toliver-Kinsky T. Fms-like tyrosine kinase-3 ligand increases resistance to burn wound infection through effects on plasmacytoid dendritic cells. *BMC Immunol*. 2017 Feb 22; 18(1):9. PMID: 28228109. PMCID: PMC5322596.
14. Guo Y, Luan L, Patil N, Wang J, **Bohannon JK**, Rabacal W, Fensterheim BA, Hernandez A, Sherwood E (2016) IL-15 enables septic shock by maintaining natural killer cell integrity and function. *J. Immunol*. 2017 Feb 1; 198(3):1320-1333. PMID: 28031340. PMCID: PMC5263185.
15. Luan L, Patil NK, Guo Y, Hernandez A, **Bohannon JK**, Fensterheim BA, Wang J, Xu Y, Enkhbaatar P, Stark R, Sherwood ER. Comparative transcriptome profiles of human blood in response to the toll-like receptor 4 ligands lipopolysaccharide and monophosphoryl lipid A. *Sci. Rep*. 2017 Jan 5; 7:40050. PMID: 28053314. PMCID: PMC5215261.
16. Patil NK, **Bohannon JK**, Luan L, Guo Y, Fensterheim B, Hernandez A, Sherwood ER. Flt3 Ligand treatment attenuates T cell dysfunction and improves survival in a murine model of burn wound infection induced sepsis. *SHOCK*. 2017 Jan; 47(1):40-51. PMID: 27454384. PMCID: PMC5167662.
17. **Bohannon JK**, Sherwood ER. Feeling the burn: Sphingolipid and infection risk after thermal injury. *J. Leukoc. Biol*. 2016 Dec; 100(6):1227-1228. PMID: 27909176.
18. **Bohannon JK***, Hernandez A*, Luan L, Fensterheim BA, Guo Y, Patil NK, Wang J, Sherwood ER. The role of MyD88- and TRIF-dependent signaling in monophosphoryl lipid A-induced expansion and recruitment of innate immunocytes. *J. Leukoc. Biol*. 2016 Dec; 100(6):1311-1322. PMID: 27354411. PMCID: PMC5109999. *These authors contributed equally.
19. Patil NK, **Bohannon JK**, Sherwood ER. Immunotherapy: A Promising Approach to Reverse Sepsis-Induced Immunosuppression. *Pharmacol. Res*. 2016 Sep; 111:688-702. PMID: 27468649. PMCID: PMC5026606.
20. **Bohannon JK**, Luan L, Hernandez A, Afzal A, Guo Y, Patil NK, Fensterheim B, Sherwood ER. Role of G-CSF in monophosphoryl lipid A-mediated augmentation of neutrophil functions after burn injury. *J. Leukoc. Biol*. 2016 Apr. 99(4):629-40. PMID: 26538529. PMCID: PMC4787290. ***Manuscript selected by the *Journal of Leukocyte Biology* for press release - http://www.eurekalert.org/pub_releases/2016-04/foas-vap040116.php.**
21. Patil NK, Luan L, **Bohannon JK**, Guo Y, Hernandez A, Fensterheim B, Sherwood ER. IL-15 Superagonist Expands mCD8+ T, NK and NKT Cells after Burn Injury but Fails to Improve

Outcome during Burn Wound Infection. *PLoS ONE*. 2016 Feb 9; 11(2):e0148452. eCollection 2016. PMID: 26859674. PMCID: PMC4747596.

22. Guo Y, Luan L, Rabacal W, **Bohannon JK**, Fensterheim B, Hernandez A, Sherwood E. Cellular and molecular mechanisms of IL-15 superagonist-mediated immunotoxicity. *J. Immunol*. 2015 Sep 1; 195:2353-64. PMID: 26216888 PMCID: PMC4543906.
23. Herzig D, Luan L, **Bohannon JK**, Toliver-Kinsky T, Guo Y, Sherwood ER. The role of CXCL10 in the pathogenesis of experimental septic shock. *Crit Care*. 2014 Jun 2; 18:R113. PMID: 24890566. PMCID: PMC4075230.
24. **Bohannon JK**, Hernandez A, Enkhbaatar P, Adams WL, Sherwood ER. The Immunobiology of TLR4 Agonists: From Endotoxin Tolerance to Immunoadjuvants. *SHOCK*. 2013 Dec; 40:451-462. PMID: 23989337. PMCID: PMC3919163. ***Manuscript figure selected for cover of *SHOCK Journal*, December issue.**
25. **Bohannon JK**, Guo Y, Sherwood ER. The role of natural killer cells in the pathogenesis of sepsis: the ongoing enigma. *Crit Care*. 2012 Dec 11; 16:185. PMID: 23234545. PMCID: PMC3672611.
26. Herzig D, Fang G, Toliver-Kinsky T, Guo Y, **Bohannon JK**, Sherwood ER. STAT1-deficient mice are resistant to CLP-induced septic shock. *SHOCK*. 2012 Oct; 38:395-402. PMID: 22777121 PMCID: PMC3445722.
27. Porter NM, **Bohannon JK**, Curran-Rauhut M, Buechel HM, Dowling ALS, et al. Hippocampal CA1 Transcriptional Profile of Sleep Deprivation: Relation to Aging and Stress. *PLoS ONE*. 2012; 7(7): e40128. doi:10.1371/journal.pone.0040128. PMID: 22792227 PMCID: PMC3390348.
28. **Bohannon JK**, Cui W, Sherwood E, Toliver-Kinsky T. Dendritic cell modification of neutrophil responses to infection after burn injury. *J. Immunol*. 2010 Sep 1; 185:2847-2853. PMID: 20679533 PMCID: PMC3100157.
29. **Bohannon J**, Cui W, Toliver-Kinsky T. Endogenous fms-like tyrosine kinase-3 ligand levels are not altered in mice after a severe burn and infection. *BMC Immunol*. 2009 Aug 28; 10:47. PMID: 19715582 PMCID: PMC2744912.
30. **Bohannon J**, Fang G, Cui W, Sherwood E, Toliver-Kinsky T. Fms-like tyrosine kinase-3 ligand alters antigen-specific responses to infections after severe burn injury. *SHOCK*. 2009 Oct; 32:435-441. PMID: 19752689 PMCID: PMC3100155.
31. **Bohannon J**, Cui W, Cox R, Przkora R, Sherwood E, Toliver-Kinsky T. Prophylactic treatment with Fms-like tyrosine kinase-3 ligand after burn injury enhances global immune responses to infection. *J. Immunol*. 2008 Mar 1; 180:3038-3048. PMID: 18292526.

Presentations and Abstracts

Invited Oral Presentations

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| 2015 | Bohannon J. , Sherwood ER. Augmentation of Antimicrobial Immunity with TLR Agonists. 38 th Annual Conference on Shock. Denver, CO. Parallel Session VI: Trained Immunity and Pattern Recognition Receptors in Critical Illness and Sepsis. <u>Invited Oral Presentation.</u> |
| 2017 | Bohannon JK , Augmentation of Antimicrobial Immunity with TLR Agonists. Vanderbilt University Medical Center, Department of Allergy/Pulmonary and Critical Care Medicine. April 3, 2017. <u>Grand Rounds Presentation.</u>

* Bohannon JK , Fensterheim BA, Luan L, Fults J, Hernandez A, Sherwood ER. The TLR4 agonist Monophosphoryl Lipid A mediates broad protection against infection via augmentation of innate antimicrobial functions (Abstract 8). 2017 Society of Leukocyte Biology 50 th Anniversary Meeting. Vancouver, BC Canada. October 2017. Senior Level Awards Session: <u>Jeanette Thorbecke Awardee Oral Presentation.</u> |
| 2018 | Bohannon JK . The protective role of TLR agonists in infection: Applications from bench to bedside. Vanderbilt University Medical Center, Department of Anesthesiology. July 13, 2018. <u>Anesthesia Grand Rounds Presentation.</u> |

Bohannon JK. Enhancing resistance to infection after burn injury with toll-like receptor agonists. Eastern Kentucky University, Department of Biology. Richmond, KY. September 11, 2018.
Invited Lecture.

Bohannon JK. Discovery of novel therapeutics for the prevention of infection in burn patients: Applications from Bench to Bedside. Eastern Kentucky University. Richmond, KY. September 11, 2018. **Invited Alumni Keynote Lecture 2018.**

2019 **Bohannon JK.** The Protective Role of TLR Agonists in Infection: From Bench to Bedside. University of Kentucky, Department of Pharmacology and Nutritional Sciences. April 11, 2019.
Invited Lecture.

Oral Presentations/Abstracts (* Published)

2013 ***Bohannon, J.** Effect of MPLA on Immune Responses to a Burn Wound Infection (*Abstract 22*). 36th Annual Conference on Shock. San Diego, CA. June 2013. Selected Oral Presentation.

Bohannon, J. Augmentation of Innate Antimicrobial Immunity after Severe Burn Injury by a TLR4 Agonist, 9th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2013. Selected Oral Presentation.

2014 ***Bohannon J,** Luan L, Hernandez A, Sherwood E. MPLA Enhances Neutrophil Responses to Infection after Burn (*Abstract 2*). 37th Annual Conference on Shock. Charlotte, NC. SHOCK. 41: Supplement 2, 2014. June 2014. **Plenary Oral Presentation.**

2017 **Bohannon JK,** Fensterheim BA, Sherwood ER. Treatment with the TLR4 agonist monophosphoryl lipid A protects mice against severe Staphylococcus aureus infection via augmentation of innate antimicrobial cell functions. The Innate Immune Memory Conference 2017. Cambridge, UK, March 2017. **Plenary Oral Presentation.**

***Bohannon JK,** Fensterheim BA, Luan L, Hernandez A, Guo Y, Patil NK, Sherwood ER. Treatment with the TLR4 Agonist Monophosphoryl Lipid A Protects Mice Against Severe Staphylococcal aureus Infection Via Augmentation of Innate Antimicrobial Cell Functions (Abstract 47). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. **Plenary Oral Presentation: Best of Best 2.**

Bohannon JK. The TLR4 agonist Monophosphoryl Lipid A mediates broad protection against infection via augmentation of innate antimicrobial cell functions. Vanderbilt Translational Research Forum 2017. October 2017. **Plenary Oral Presentation.**

2018 **Bohannon JK,** Fensterheim BA, Luan L, Patil NK, Sherwood ER. The TLR4 Agonist Monophosphoryl Lipid a Induces Dynamic Reprogramming of Macrophage Metabolism for Enhancement of Antimicrobial Functions and Infection Resistance (Abstract 57). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Chandler, AZ. October 2018. Selected Oral Presentation and Poster.

2019 **Bohannon JK.** Prevention and Treatment of Post-Burn Infections in Mice and Sheep with the Toll-Like Receptor 4 Agonist Monophosphoryl Lipid A. 2019 Military Health Systems Research Symposium. Kissimmee, FL. August 19, 2019. Selected Oral Presentation.

Bohannon JK, Fensterheim BA, Hernandez A, Luan L, Patil NK, Fults JB, Stothers CL, Sherwood ER. TLR agonists mediate protection against severe nosocomial infections via activation of MYD88. 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands. October 2019. Selected Oral Presentation – INTRIM Consortium Meeting.

2020 *Hernandez A, Luan L, Fensterheim B, Fults J, Owen A, Sherwood ER, **Bohannon JK**. Prevention and treatment of post-burn infections in mice with toll-like receptor agonists. 2020 Military Health Systems Research Symposium. Kissimmee, FL. August 2020. Selected oral presentation.

Poster Presentations/Abstracts (* Published)

- 2007 ***Bohannon, J.K.**, W. Cui, T. Toliver-Kinsky. Endogenous Flt3-ligand levels are not altered in mice after a severe burn and infection, 30th Annual Conference on Shock, Baltimore, MD. June 2007. Poster.
- 2008 ***Bohannon, J.**, Cui, W., Fang, G., Saito, A., Wen, X., Toliver-Kinsky, T. Dendritic cell growth factor fms-like tyrosine kinase-3 ligand enhances neutrophil migration and activation in response to infections, Society for Leukocyte Biology, Denver, CO, November 2008. Poster.
- 2010 ***Bohannon, J.**, Cui, W., Toliver-Kinsky, T. Dendritic cell modifications of neutrophil responses after burn injury, 33rd Annual Conference on Shock, Portland, OR, June 2010. Poster.
- 2012 **Bohannon, J.**, Sherwood, E. Effect of MPLA treatment on immune responses to a burn wound infection, Vanderbilt PMI Departmental Retreat, Cheekwood Botanical Gardens, November 2012. Poster.
- Bohannon, J.**, Romero, C., Sherwood, E. Effect of MPLA treatment on immune responses to a burn wound infection, 8th Annual Anesthesiology Research Symposium, Vanderbilt University Medical Center, May 2012. Poster.
- Bohannon, J.**, Romero, C., Sherwood, E. Effect of MPLA treatment on immune responses to a burn wound infection, IHII/McLaughlin Colloquium, UTMB, April 2012. Poster.
- 2013 **Bohannon, J.**, Sherwood, E. Effect of MPLA treatment on immune responses to a burn wound infection, Vanderbilt Postdoctoral Research and Shared Resources Symposium 2013. Vanderbilt University. April 2013. Poster.
- 2014 ***Bohannon J**, Luan L, Hernandez A, Sherwood E. Treatment with TLR4 Agonist Monophosphoryl Lipid A Enhances Neutrophil Responses to Infection after Burn (*Abstract 77*). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Salt Lake City, UT. October 2014. Poster.
- Bohannon J**, Luan L, Hernandez A, Sherwood E. MPLA Enhances Neutrophil Responses to Infection after Burn. 10th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2014. Poster.
- Bohannon J**, Luan L, Hernandez A, Sherwood E. MPLA Enhances Neutrophil Responses to Infection after Burn. Postdoctoral Research and Shared Resources Symposium 2014. Vanderbilt University. April 2014. Poster.
- 2015 **J. Bohannon**, L. Luan, A. Hernandez, A. Afzal, E. Sherwood. Treatment with TLR Agonists Enhances Neutrophil-Mediated Responses to Infection. TOLL 2015 Meeting: Targeting Innate Immunity. Marbella, Spain. Abstract Book p. 226. Poster.
- ***J. Bohannon**, L. Luan, A. Hernandez, E. Sherwood. Treatment with a TLR4 Agonist Enhances Neutrophil Responses to Infection after Burn (*Abstract P11*). 38th Annual Conference on Shock. Denver, CO. SHOCK. 43: Supplement 1, June 2015. Poster.
- ***Bohannon, J.**, Luan, L., Hernandez, A., Sherwood, E. MPLA mediates protection against infection after severe burn through enhancement of neutrophil mobilization and recruitment: role of G-CSF. 11th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2015. Poster. *Best Poster Presentation Award*.

- 2016 **Bohannon JK**, Luan L, Hernandez A, Fensterheim B, Guo Y, Sherwood E. Treatment with TLR4 agonists protect against infection after severe burn injury. 12th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2016. Poster.
- ***Bohannon JK**, Luan L, Hernandez A, Fensterheim B, Guo Y, Sherwood E. Treatment with TLR4 agonists protect against infection after severe burn injury. *J. Immunol* 2016. 196:200.17 (Abstr.) AAI Annual Meeting – Immunology 2016, Seattle, WA May 2016. Poster.
- ***Bohannon JK**, Luan L, Hernandez A, Fensterheim BA, Guo Y, Sherwood E. Treatment with TLR Agonists Protect Against Infection after Severe Burn Injury (*Abstract P169*). 39th Annual Conference on Shock. Austin, TX. *SHOCK*. 45: Supplement I, June 2016. Poster.
- Bohannon JK**, Hernandez A, Fensterheim B, Luan L, Sherwood E. Treatment with TLR Agonists Protect Against Infection after Severe Burn Injury. 2016 Vanderbilt Translational Research Forum. October 2016. Poster.
- 2017 **Bohannon JK**, Treatment with the TLR4 agonist monophosphoryl lipid A protects mice against severe Staphylococcus aureus infection via augmentation of innate antimicrobial cell functions. The Innate Immune Memory Conference 2017. Cambridge, UK, March 2017. Poster.
- Bohannon JK**, Fensterheim B, Sherwood ER. Treatment with MPLA Augments Innate Antimicrobial Responses Against Staphylococcus aureus Infection. Vanderbilt Symposium on Infection and Immunology. April 13, 2017. Poster.
- Bohannon JK**, Fensterheim B, Luan L, Hernandez A, Guo Y, Patil N, Sherwood E. Treatment with the TLR4 agonist monophosphoryl lipid A protects mice against severe Staphylococcus aureus infection via augmentation of innate antimicrobial cell functions. 13th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2017. Poster.
- Fensterheim BA, Sherwood ER, **Bohannon JK**. Treatment with the TLR4 agonist monophosphoryl lipid A protects mice against severe Staphylococcus aureus infection via augmentation of innate antimicrobial cell functions. Southeastern Immunology Symposium. Vanderbilt University, Nashville, TN. June 2017. Poster.
- Bohannon JK**, Fensterheim BA, Luan L, Fults J, Hernandez A, Sherwood ER. The TLR4 agonist Monophosphoryl Lipid A mediates broad protection against infection via augmentation of innate antimicrobial functions (Abstract 8). 2017 Society of Leukocyte Biology 50th Anniversary Meeting. Vancouver, BC Canada. October 2017. Poster.
- 2018 **Bohannon JK**, Fensterheim B, Luan L, Fults JB, Hernandez A, Patil NK, Sherwood ER. Treatment with TLR agonists protect against severe nosocomial infections. 14th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2018. Poster.
- ***Bohannon JK**, Fensterheim BA, Young JD, Trenary I, Luan L, Sherwood ER. The TLR4 agonist monophosphoryl lipid A induces dynamic reprogramming of macrophage metabolism for enhancement of antimicrobial functions and infection resistance (Abstract P126). 41st Annual Conference on Shock. Scottsdale, AZ. *SHOCK*. 49: Supplement 1, June 2018. Poster.
- ***Bohannon JK**, Fensterheim B, Luan L, Fults JB, Hernandez A, Patil NK, Sherwood ER. Treatment with TLR agonists protect against severe nosocomial infections (Abstract P127). 41st Annual Conference on Shock. Scottsdale, AZ. *SHOCK*. 49: Supplement 1, June 2018. Poster.
- Bohannon JK**, Luan L, Hernandez A, Sherwood ER. Prevention and treatment of post-burn infections with the toll-like receptor agonist monophosphoryl lipid A (Abstract MHSRS-18-1476). Military Health System Research Symposium (MHSRS) 2018. Kissimmee, FL. August 2018. Poster.

Bohannon JK, Fensterheim BA, Luan L, Patil NK, Sherwood E. The TLR4 agonist monophosphoryl lipid A induces dynamic reprogramming of macrophage metabolism for enhancement of antimicrobial functions and infection resistance (Abstract 57). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Chandler, AZ. October 2018. Poster.

Bohannon JK, Fensterheim BA, Luan L, Fults JB, Hernandez A, Patil NK, Sherwood ER. Treatment with TLR Agonists Protect Against Severe Nosocomial Infections (Abstract 62). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Chandler, AZ. October 2018. Poster.

2019 **Bohannon JK**. MyD88-dependent signaling is essential for TLR agonist-mediated protection against severe nosocomial infections. 15th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2019. Poster.

***Bohannon JK**, Fensterheim BA, Luan L, Hernandez A, Patil NK, Fults JB, Stothers CL, Sherwood ER. MyD88-dependent signaling is essential for TLR agonist-mediated protection against severe nosocomial infections (Abstract P193). 42nd Annual Conference on Shock. Coronado, CA. SHOCK. 51: Supplement 1, June 2019. Poster.

Bohannon JK, Luan L, Hernandez A, Fensterheim BA, Patil NK, Stothers CL, Fults JB, Sherwood ER. Treatment with TLR agonists protect against severe nosocomial infections via activation of MyD88 signaling. 52nd Annual Meeting of the Society for Leukocyte Biology. Boston, MA. November 2019. Poster.

Co-Authored Abstracts (* Published)

2006 Garza A., **Bohannon JK**, and Toliver-Kinsky T. Treatment of mice with Fms-like tyrosine kinase-3 ligand increases the activation of immune cells in response to a bacterial burn wound infection. HSSRP poster session, July 2006, UTMB

2007 C. Graham, W. Cui, **J. Bohannon** and T. Toliver-Kinsky. In vitro response of plasmacytoid dendritic cells to fms-like tyrosine kinase-3 ligand treatment. Presented at SURP poster session, UTMB, August 2007.

J. Garcia, **J. Bohannon** and T. Toliver-Kinsky. The role of Flt3 Ligand in the enhancement of immune function after burn injury Presented at HSSRP poster session, UTMB, August 2007.

2008 JR Williams, W Cui, G Fang, J Bohannon, T Toliver-Kinsky. Dendritic cell modulation enhances neutrophil-mediated resistance to burn wound infection. Presented at MSSRP poster session, UTMB, June 2008. *won award for best overall basic sciences poster.

*Toliver-Kinsky, T., Cui, W., Fang, G., **Bohannon, J.**, Williams, J. Dendritic cell modulation enhances neutrophil-mediated clearance of burn wound infections, Society for Leukocyte Biology, Denver, CO, November 2008. Poster.

2010 Stutts, B., **Bohannon, J.**, Cui, W., Toliver-Kinsky, T. Effect of FL on in vitro migration of MPRO neutrophil-like cell line. Presented at SURP poster session, UTMB, August 2010. Poster.

2011 Sherwood, L., **Bohannon, J.** DC modification of neutrophil responses after burn, Bench Tutorials Program Year-End Symposium, UTMB, May 2011. 2nd Place Prize. Poster.

Scott, P., **Bohannon, J.**, Cui, W., Toliver-Kinsky, T. (2011) Modification of neutrophil migration molecules by dendritic cell growth factor Flt3-L. Presented at SURP poster session, UTMB, August 2011.

2014 *Hernandez A, Luan L, **Bohannon J**, Sherwood E. The Role of MyD88- and TRIF-dependent Signaling in the Mobilization and Recruitment of Neutrophils by the TLR Agonist Monophosphoryl

Lipid A (*Abstract 66*). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Salt Lake City, UT. October 2014. Poster.

*Luan L, Herzig DS, **Bohannon J**, Toliver-Kinsky T, Guo Y, Sherwood E. The role of CXCL10 in the pathogenesis of experimental septic shock (*Abstract 43*). 37th Annual Conference on Shock. Charlotte, NC. SHOCK 41: Supplement 2, 2014. June 2014. Poster.

2015

A. Hernandez, **J. Bohannon**, B. Fensterheim, L. Luan, N. Patil, E. Sherwood. Role of MyD88- and TRIF-Dependent Signaling in MPLA-Induced Neutrophil Mobilization and Recruitment. TOLL 2015 Meeting: Targeting Innate Immunity. Marbella, Spain. Abstract Book p. 337. Poster.

B.A. Fensterheim, **J Bohannon**, J.D. Young, E.R. Sherwood. MyD88-Associated Toll-Like Receptor Ligands Prime Macrophage Metabolism for Infection. TOLL 2015 Meeting: Targeting Innate Immunity. Marbella, Spain. Abstract Book p. 125. Poster.

*Y. Guo, L. Luan, N.K. Patil, **J. Bohannon**, E. Sherwood. Interleukin (IL)-15 Facilitates the Pathogenesis of CLP-Induced Septic Shock by Activation of NK, NKT and Memory CD8⁺ T Lymphocytes (*Abstract 3*). 38th Annual Conference on Shock. Denver, CO. SHOCK. 43: Supplement 1, June 2015. Plenary Oral Presentation.

*A. Hernandez, L. Luan, **J. Bohannon**, B. Fensterheim, E. Sherwood. Molecular Mechanisms of Monophosphoryl Lipid A Induced Neutrophil Mobilization and Recruitment (*Abstract 32*). 38th Annual Conference on Shock. Denver, CO. SHOCK. 43: Supplement 1, June 2015. Oral Presentation.

*N.K. Patil, L. Luan, Y. Guo, **J. Bohannon**, E. Sherwood. Interleukin-15 Treatment Expands Splenic NK and CD8 T Cells But Fails to Improve Survival During Burn Wound Sepsis (*Abstract P17*). 38th Annual Conference on Shock. Denver, CO. SHOCK. 43: Supplement 1, June 2015. Poster.

*N.K. Patil, **J. Bohannon**, L. Luan, Y. Guo, E. Sherwood. Burn Wound Infection Causes Significant Adaptive Immune System Dysfunction (*Abstract P159*). 38th Annual Conference on Shock. Denver, CO. SHOCK. 43: Supplement 1, June 2015. Poster.

Hernandez A, **Bohannon JK**, Luan L, Fensterheim B, Sherwood E. Regulation of neutrophil mobilization and recruitment by the TLR4 agonist monophosphoryl lipid A: cellular and molecular mechanisms. 11th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2015. Poster.

Patil N., **Bohannon J**, Luan L, Guo Y, Sherwood E. Burn wound infection causes significant adaptive immune system dysfunction. 11th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2015. Poster.

Patil N., **Bohannon J**, Luan L, Guo Y, Sherwood E. Burn wound infection causes significant adaptive immune system dysfunction. Postdoctoral Research and Shared Resources Symposium 2015. Vanderbilt University. April 2015. Poster.

Hernandez A, Fensterheim B, **Bohannon JK**, Luan L, Sherwood E. Regulation of neutrophil mobilization and recruitment by the TLR4 agonist monophosphoryl lipid A: cellular and molecular mechanisms. Association of University Anesthesiologists Annual Meeting. Nashville, TN. April 2015. Poster.

2016

Luan L, Patil N, Guo Y, Hernandez A, **Bohannon J**, Fensterheim B, Wang J, Lu P, Xu Y, Enkhbaatar P, Sherwood E. Lipopolysaccharide and monophosphoryl lipid A induce similar transcriptome profiles in human blood with the exception of proinflammatory genes. 12th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2016. Poster.

Patil N, **Bohannon J**, Luan L, Guo Y, Sherwood E. Preclinical evaluation of Flt3 ligand to improve T cell adaptive immune response during sepsis. 12th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2016. Poster.

Hernandez A, Luan L, **Bohannon J**, Fensterheim B, Guo Y, Patil N, Wang J, Sherwood E. Role of MyD88- and Trif-dependent signaling in MPLA-induced neutrophil mobilization and recruitment. 12th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. May 2016. Poster.

*Patil N, **Bohannon J**, Luan L, Guo Y, Sherwood E. Preclinical evaluation of Flt3 ligand to improve T cell adaptive immune response during sepsis. Experimental Biology Annual Meeting 2016. San Diego, CA. May 2016. Poster.

*Fensterheim B, **Bohannon J**, Guo Y, Sherwood E. MyD88-associated Toll-like receptor ligands prime macrophage metabolism for infection. *J. Immunol* 2016. 196:203.24 (Abstr.)

*Guo Y, Luan L, Rabacal W, **Bohannon J**, Fensterheim B, Hernandez A, Sherwood E. Interleukin (IL)-15 superagonist mediates immunotoxicity by inducing hyperproliferation of activated NK cells and production of IFN-gamma. *J. Immunol* 2016. 196:142.23 (Abstr.)

*Guo Y, Luan L, **Bohannon J**, Patil N, Fensterheim B, Hernandez A, Wang J, Sherwood E. The lack of NK and mCD8+ T cells in IL-15KO mice confers resistance to septic shock. *J Immunol* 2016. 196:60.9 (Abstr.)

*Guo Y, Luan L, Patil NK, **Bohannon JK**, Wang J, Fensterheim BA, Hernandez A, Sherwood E. Interleukin (IL)-15 Plays a Critical Role in the Pathogenesis of CLP- and LPS-induced Septic Shock by Maintaining NK and Memory CD8+ T Cells (*Abstract 8*). 39th Annual Conference on Shock. Austin, TX. *SHOCK*. 45: Supplement I, June 2016. Plenary Oral Presentation.

*Patil NK, **Bohannon JK**, Luan L, Guo Y, Sherwood E. Flt3 Ligand Attenuates Adaptive Immune System Dysfunction During Burn Wound Sepsis (*Abstract 20*). 39th Annual Conference on Shock. Austin, TX. *SHOCK*. 45: Supplement I, June 2016. New Investigator Competition Oral Presentation.

*Fensterheim BA, **Bohannon JK**, Guo Y, Sherwood E. Very Late TLR4-Driven Elevation in Macrophage Oxidative Metabolism Following Early Aerobic Glycolysis Promotes Infection Resolution (*Abstract P49*). 39th Annual Conference on Shock. Austin, TX. *SHOCK*. 45: Supplement I, June 2016. Poster.

*Hernandez A, Luan L, **Bohannon JK**, Fensterheim B, Guo Y, Patil NK, Wang J. The Role of MyD88- and TRIF-Dependent Signaling in the Trafficking of Innate Immune Cells by Monophosphoryl Lipid A (*Abstract P127*). 39th Annual Conference on Shock. Austin, TX. *SHOCK*. 45: Supplement I, June 2016. Poster.

2017

Fensterheim BA, Guo Y, Sherwood ER, **Bohannon J**. The LPS-elicited cytokine does not predict the host response to infection. The Innate Immune Memory Conference 2017. Cambridge, UK, March 2017. Poster.

*Mignemi NA, Moore-Lotridge SN, Gibson BHY, Baker CE, Hawley GD, Ihejirika RC, **Bohannon JK**, Oelsner WK, Wallace CS, Luan L, Sherwood ER, Schoenecker JG. Severe Injury Leads to Plasmin Consumption Below a Critical Threshold Required to Heal Soft Tissue Injury. Plastic Surgery Research Council 62nd Annual Meeting. Durham, NC. May 2017. Poster.

Luan L, Patil NK, Guo Y, Hernandez A, **Bohannon JK**, Fensterheim BA, Wang J, Xu Y, Enkhbaatar P, Stark R, Sherwood ER. Comparative transcriptome profiles of human blood in response to the toll-like receptor 4 ligands lipopolysaccharide and monophospholipid A. Vanderbilt Symposium on Infection and Immunology. April 13, 2017. Poster.

Guo Y, Luan L, Patil N, Wang J, Hernandez A, Rabacal W, **Bohannon J**, Fensterheim B, Sherwood E. Interleukin (IL)-15 enables septic shock by maintaining natural killer cell integrity and function. Vanderbilt Symposium on Infection and Immunology. April 13, 2017. Poster.

Fensterheim BA, Young JD, Stothers C, Luan L, **Bohannon JK**, Sherwood ER. Late TLR-driven switch from macrophage aerobic glycolysis to energy metabolism facilitates non-specific resistance to infection. Vanderbilt Symposium on Infection and Immunology. April 13, 2017. Poster.

Guo Y, Luan L, Patil N, Wang J, Hernandez A, Rabacal W, **Bohannon J**, Fensterheim B, Sherwood E. Interleukin (IL)-15 enables septic shock by maintaining natural killer cell integrity and function. 13th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2017. Poster.

Stothers C, Fensterheim B, **Bohannon J**, Sherwood E. Beta-glucan training enhances innate immune effector function to improve antimicrobial response to *Pseudomonas aeruginosa* infection in burned mice. 13th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2017. Poster.

Patil N, Luan L, **Bohannon J**, Hernandez A, Guo Y, Sherwood E. Burn wound sepsis induced T cell dysfunction: Anti-PD-L1 antibody improves survival. 13th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2017. Poster.

Fensterheim B, Young Jamey, Sherwood E, **Bohannon J**. Monophosphoryl lipid A induces persistent alterations to macrophage metabolism and antimicrobial function. 13th Annual Anesthesiology Research Symposium. Vanderbilt University Medical Center. April 2017. Poster.

*Guo Y, Luan L, Patil N, Wang J, **Bohannon JK**, Rabacal W, Fensterheim B, Hernandez A, Sherwood E. Interleukin 15 Enables Septic Shock by Maintaining Natural Killer Cell Integrity and Function. (Abstract 6). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Plenary Oral Presentation: *Best of Best*.

*Patil NK, Luan L, **Bohannon JK**, Hernandez A, Guo Y, Sherwood ER. Burn Wound Sepsis Induced T Cell Dysfunction: Anti-PD-L1 Antibody Improves Survival. (Abstract P89). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

*Fensterheim BA, Guo Y, Sherwood ER, **Bohannon JK**. The LPS-Elicited Cytokine Response Does Not Predict the Host Response to Infection. (Abstract P120). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

*Stothers C, **Bohannon J**, Luan L, Sherwood E. Beta-Glucan Training Enhances Innate Immune Effector Function to Improve Antimicrobial Responses to *Pseudomonas aeruginosa* Infection in Burned Mice. (Abstract P139). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

*Luan L, Patil N, Guo Y, Hernandez A, **Bohannon J**, Fensterheim B, Wang J, Xu Y, Enkhbaatar P, Stark R, Sherwood E. Comparative Transcriptome Profiles of Human Blood in Response to the Toll-like Receptor 4 Ligands Lipopolysaccharide and Monophosphoryl Lipid A. (Abstract P208). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

*Hernandez A, **Bohannon JK**, Luan L, Fensterheim BA, Fults JB, Patil NK, Parker R, Guo Y, Wang J, Sherwood ER. Enhancement of Innate Anti-Microbial Immunity Using Novel Synthetic TLR4 Agonists. (Abstract P220). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

*Parker R, **Bohannon JK**, Fensterheim B, Patil N, Luan L, Guo Y, Stothers C, Hernandez A, Sherwood ER. Characterization of Lymphocyte Metabolism in a Murine Sepsis Model. (Abstract

P251). 40th Annual Conference on Shock. Ft. Lauderdale, FL. SHOCK 47: Supplement 1, 2017. June 2017. Poster.

Fensterheim BA, Young JD, **Bohannon JK**, Sherwood ER. Monophosphoryl lipid A drives persistent broad resistance to infection via dynamic TLR4-mediated metabolic reprogramming. Southeastern Immunology Symposium. Vanderbilt University, Nashville, TN. June 2017. Poster.

Stothers CL, **Bohannon J**, Fensterheim B, Sherwood E. Beta-glucan training enhances antimicrobial responses to *Pseudomonas aeruginosa* infection. Southeastern Immunology Symposium. Vanderbilt University, Nashville, TN. June 2017. Poster.

*Stothers CL, Fensterheim BA, **Bohannon JK**, Sherwood ER. Dissecting mechanisms of beta-glucan trained immunity (Abstract 20). 2017 Society of Leukocyte Biology 50th Anniversary Meeting. Vancouver, BC Canada. October 2017. Oral Presentation.

*Sherwood E, Young J, Trenary I, **Bohannon J**, Fensterheim B. Modification of macrophage metabolism and memory by TLR4 agonists (Abstract 29). 2017 Society of Leukocyte Biology 50th Anniversary Meeting. Vancouver, BC Canada. October 2017. Oral Presentation.

*Hernandez A, **Bohannon JK**, Fensterheim BA, Fults JB, Patil NK, Parker R, Guo Y, Wang J, Sherwood ER. Anti-microbial resistance via enhancement of innate immunity using novel synthetic TLR4 agonists (Abstract 82). 2017 Society of Leukocyte Biology 50th Anniversary Meeting. Vancouver, BC Canada. October 2017. Poster.

2018

*Luan L, Fensterheim BA, Stothers C, Fults JB, Guo Y, Patil NK, Sherwood ER, **Bohannon JK**. The TLR4 agonist monophosphoryl lipid A mediates broad protection against infection via augmentation of innate antimicrobial cell functions (Abstract 24). 41st Annual Conference on Shock. Scottsdale, AZ. SHOCK. 49: Supplement 1, June 2018. Oral Presentation.

*Patil N, Luan L, **Bohannon JK**, Hernandez A, Guo Y, Sherwood ER. Anti-PD-L1 attenuates T cell dysfunction and protects against infection with common nosocomial pathogens after severe burn injury (Abstract 10). 41st Annual Conference on Shock. Scottsdale, AZ. SHOCK. 49: Supplement 1, June 2018. Oral Presentation.

*Hernandez A, **Bohannon JK**, Luan L, Fults JB, Fensterheim BA, Stothers CL, Guo Y, Patil NK, Wang J, Sherwood ER. Synthetic phosphorylated hexaacyl disaccharides are potent TLR4 agonists and augment host resistance against common nosocomial pathogens (Abstract 48). 41st Annual Conference on Shock. Scottsdale, AZ. SHOCK. 49: Supplement 1, June 2018. Oral Presentation.

*Stothers CL, Guo Y, Travisano K, Luan L, **Bohannon JK**, Montano M, Williams DL, Sherwood ER. Endothelial mTOR signaling drives vascular inflammation (Abstract P99). 41st Annual Conference on Shock. Scottsdale, AZ. SHOCK. 49: Supplement 1, June 2018. Poster.

*Stothers CL, Luan L, **Bohannon JK**, Hernandez A, Fensterheim BA, Williams DL, Sherwood ER. Dectin-1 and toll-like receptor-2 are not essential for beta-glucan-induced protection from *Pseudomonas aeruginosa* infection (Abstract P196). 41st Annual Conference on Shock. Scottsdale, AZ. SHOCK. 49: Supplement 1, June 2018. Poster.

Hernandez A, **Bohannon JK**, Luan L, Fensterheim B, Fults J, Patil N, Sherwood ER. Novel synthetic toll-like receptor 4 agonists enhance resistance to infection with common bacterial pathogens (Abstract MHSRS-18-1471). Military Health System Research Symposium (MHSRS) 2018. Kissimmee, FL. August 2018. Poster.

Sherwood ER, **Bohannon JK**, Hernandez A, Fukuda S, Randolph A, Michael S, Ihara K, Cox RA, Hawkins HK, Herndon D, Prough D, Enkhbaatar E. The toll-like receptor-4 agonist monophosphoryl lipid A protects sheep from lung injury and sepsis in a model of cutaneous burn and pneumonia (Abstract MHSRS-18-1160). Military Health System Research Symposium (MHSRS) 2018. Kissimmee, FL. August 2018. Poster.

Luan L, Fensterheim BA, Stothers CL, Guo Y, Patil NK, Sherwood ER, **Bohannon JK**. The TLR4 Agonist Monophosphoryl Lipid a Mediates Broad Protection Against Infection via Augmentation of Innate Antimicrobial Functions (Abstract 61). Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin and Innate Immunity Society. Chandler, AZ. October 2018. Poster.

*Fults JB, Fensterheim BA, Luan L, Hernandez A, Sherwood ER, **Bohannon JK**. The Protective Role of TLR Agonists in Infection: Applications from Bench to Bedside. The Anesthesiology Annual Meeting (ASA). San Francisco, CA. October 2018. Poster.

2019

*Hernandez A, Luan L, Stothers CL, Fults JB, Fensterheim BA, Patil NK, Guo Y, Wang J, Sherwood ER, **Bohannon JK**. Novel synthetic toll-like receptor 4 agonists enhance resistance to infection with common bacterial pathogens (Abstract 52). 42nd Annual Conference on Shock. Coronado, CA. SHOCK. 51: Supplement 1, June 2019. Oral Presentation.

*Patil NK, Luan L, **Bohannon JK**, Hernandez A, Fensterheim B, Sherwood ER. Immunosuppressive gene 1 and itaconate: key mediators of TLR4 agonist-induced protection against infection (Abstract 78). 42nd Annual Conference on Shock. Coronado, CA. SHOCK. 51: Supplement 1, June 2019. Oral Presentation.

*Patil NK, Fensterheim B, Luan L, **Bohannon JK**, Hernandez A, Sherwood ER. Mitochondrial biogenesis plays an important role in monophosphoryl lipid A-mediated reprogramming of macrophage metabolism and function (Abstract P31). 42nd Annual Conference on Shock. Coronado, CA. SHOCK. 51: Supplement 1, June 2019. Poster.

*Stothers CL, Luan L, **Bohannon JK**, Burelback K, Kinnare N, Williams DL, Sherwood ER. Beta-glucan protects mice from lethal Pseudomonas aeruginosa infection: insights into the signaling mechanisms supporting trained immunity (Abstract P98). 42nd Annual Conference on Shock. Coronado, CA. SHOCK. 51: Supplement 1, June 2019. Poster.

Hernandez A, Sherwood ER, **Bohannon JK**. Enhancing resistance to nosocomial infections with synthetic toll-like receptor agonists (MHSRS-19-01827). Military Health Systems Research Symposium 2019. August 2019. Kissimmee, FL. Poster.

Fults J, Fensterheim BA, Luan L, Hernandez A, Sherwood ER, **Bohannon JK**. MYD88 is important for TLR agonist-mediated protection against severe nosocomial infections. HOSA 42nd Annual International Leadership Conference. Orlando, FL. June 2019. Invited Oral Presentation.

Fults J, Fensterheim BA, Luan L, Hernandez A, Sherwood ER, **Bohannon JK**. Enhancement of innate anti-microbial immunity using phosphorylated hexaacyl disaccharides. HOSA 42nd Annual International Leadership Conference. Orlando, FL. June 2019. Invited Oral Presentation.

Patil NK, Luan L, **Bohannon JK**, Stothers CL, Hernandez A, Fensterheim BA, Sherwood ER. Toll-like receptor 4 agonist-induced mitochondrial biogenesis, Irg1 expression and itaconate production protect against infection with common nosocomial pathogens. 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands. October 2019. Poster.

Hernandez A, Luan L, Stothers CL, Patil NK, Fults JB, Fensterheim BA, Wang J, Sherwood ER, **Bohannon JK**. Phosphorylated hexaacyl disaccharides induce trained innate immunity and resistance to infection with nosocomial pathogens. 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands. October 2019. Poster.

Stothers C, Luan L, **Bohannon J**, Burelback K, Patil N, Hernandez A, Williams D, Sherwood E. Beta-glucan protects mice from Pseudomonas aeruginosa infection: insights into the signaling mechanisms underlying innate immune memory. 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands. October 2019. Poster.

Hernandez A, Luan L, Stothers CL, Patil NK, Fults JB, Fensterheim BA, Wang J, Sherwood ER, **Bohannon JK**. Novel synthetic toll-like receptor 4 agonists enhance survival and augment resistance against Gram-negative and Gram-positive infection. 52nd Annual Meeting of the Society for Leukocyte Biology. Boston, MA. November 2019. Poster.

2020 Owen AM, Luan L., Fensterheim B, Hernandez A, Stothers C, Fults JB, Patil NK, Sherwood ER, Burelbach KR, McBride MA, **Bohannon JK**. MyD88-specific TLR agonists mediate protection against nosocomial infections through macrophage reprogramming (Abstract 38). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Oral Presentation.

Hernandez, A, Scarfe, LN, Delgado, RD, Patil, NK, Himmel L, **Bohannon JK**, Sherwood ER, de Caestecker MP. Preclinical evaluation of a novel synthetic toll-like receptor 4 agonist to enhance resistance to ischemia-reperfusion-induced acute kidney injury (Abstract P160). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Poster.

Burelbach KR, Stothers C, Luan L, **Bohannon JK**, Williams DL, Sherwood, ER. Beta-Glucan augments macrophage antimicrobial activity and metabolism (Abstract P215). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Poster.

Luan L, Patil NK, Hernandez A, Stothers C, Owen AM, Burelbach KR, Patil T, Wang J, **Bohannon JK**, Sherwood ER. Role of interleukin-1 receptor-associated kinase M in murine models of LPS induced inflammation and bacterial infection (Abstract P217). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Poster.

Stothers C, Burelbach KR, Luan L, **Bohannon JK**, Patil NK, Hernandez A, Williams DL, Sherwood ER. Assessing the function of dectin-1 and toll-like receptor 2 in beta-glucan-mediated protection against *Pseudomonas aeruginosa* infection (Abstract P223). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Poster.

McBride MA, Luan L, **Bohannon JK**, Stothers C, Hernandez A, Burelbach KR, Wang J, Sherwood ER, Patil NK. MPLA augments protection from infection by inducing mitochondrial biogenesis and itaconate production (Abstract P60). 43rd Annual Conference on Shock. Toronto, BC, CA. SHOCK. 53: Supplement 1S. June 2020. Poster.

Invited Lectures

2015 **Bohannon J**. Sherwood ER. Augmentation of Antimicrobial Immunity with TLR Agonists. 38th Annual Conference on Shock. Denver, CO. Parallel Session VI: Trained Immunity and Pattern Recognition Receptors in Critical Illness and Sepsis. **Invited Oral Presentation.**

2017 **Bohannon JK**. Augmentation of Antimicrobial Immunity with TLR Agonists. Vanderbilt University Medical Center, Department of Allergy/Pulmonary and Critical Care Medicine. April 3, 2017. **Grand Rounds Presentation.**

2018 **Bohannon JK**. The protective role of TLR agonists in infection: Applications from bench to bedside. Vanderbilt University Medical Center, Department of Anesthesiology. July 2018. **Anesthesia Grand Rounds Presentation.**

Bohannon JK. Enhancing resistance to infection after burn injury with toll-like receptor agonists. Eastern Kentucky University. Department of Biology. Richmond, KY. September 2018. **Invited Lecture.**

Bohannon JK. Discovery of novel therapeutics for the prevention of infection in burn patients: Applications from Bench to Bedside. Eastern Kentucky University. Richmond, KY. September 2018. **Alumni Keynote Lecture 2018.**

- 2019 **Bohannon JK.** The Protective Role of TLR Agonists in Infection: From Bench to Bedside. University of Kentucky, Department of Pharmacology and Nutritional Sciences. April 11, 2019. **Invited Lecture.**
- 2020 **Bohannon JK.** Research Special Interest Group Panel: Small Animal Models for Burn Sepsis: Pros and Cons. American Burn Association 52nd Annual Meeting. March 17, 2020. Orlando, FL. CANCELLED DUE TO COVID-19. **Invited Panelist Speaker.**

Teaching / Academic Activities

- 2009 BBSC 6119, UTMB – Smoking Caused Disease – Distribution, Impact, and Mechanisms - One 90 minute lecture on Immunotoxicology
Bromberg Workshop for Teaching and Mentoring, certification of completion.
PMCH 6155, UTMB - Teaching in Toxicology – Two one hour and fifteen-minute lectures on Immunotoxicology to TAMUG MARB 414 upper level undergraduate students.
CTPS 6301, UTMB- College Teaching and Learning course
- 2010 PMCH 6155, UTMB - Teaching in Toxicology – Two one hour and fifteen minute lectures on Immunotoxicology to TAMUG MARB 414 upper level undergraduate students.
- 2011 Postdoctoral certificate course CTPS6202 – Teaching Practicum Laboratory. Acted as a co-facilitator for two hours per day for two days each week in a lab course for medical students at UTMB, plus faculty planning sessions, for 8 consecutive weeks
- 2018 Lecturer – IGP Bioregulation – Innate Immunology Lecture, September 2018.
- 2020 Mentor – Foundation for Anesthesia Education and Research (FAER) Virtual Medical Student Anesthesia Research Fellowship (MSARF) Summer Program: Small group mentor for 8 weeks, Journal Club Mentor/Facilitator.

Research Mentoring

- 2006 Alexandria Garza, Summer Undergraduate Research Program, UTMB.
- 2007 Christen Graham, Summer Undergraduate Research Program, School of Medicine, UTMB.
Josh Garcia, High School Summer Research Program, School of Medicine, UTMB.
- 2008 Jessica Williams, Medical Student Summer Research Program, School of Medicine, UTMB.
Xingyi Wen, High School Summer Research Program, School of Medicine, UTMB.
Akira Saito, College Intern from Rice University.
- 2010 Brittany Stutts, Summer Undergraduate Research Program, School of Medicine, UTMB.
- 2010 Lynn Sherwood, Bench Tutorials; Scientific Research and Design Program, NIEHS Center in Environmental Toxicology and the Sealy Center for Environmental Health and Medicine – Mentorship of Ball High School student for 2010-2011 school year.
- 2011 Passion Scott, Summer Undergraduate Research Program, School of Medicine, UTMB.
- 2012 Yin Guo, full-time graduate student, Department of Pathology, Microbiology and Immunology, Vanderbilt University. (Co-Mentor Period: 2012-2017)
- 2013 Antonio Hernandez, MD., Clinical Researcher, Department of Anesthesiology, Vanderbilt University. (Co-Mentor Period: 2013-Present)

Benjamin Fensterheim, MSTP student, Department of Anesthesiology, Vanderbilt University. (Co-Mentor Period: 2013-2017)

Liming Luan, Ph.D., staff scientist, Department of Anesthesiology, Vanderbilt University. (Personnel Training)

Jingbin Wang, B.S., lab technician, Department of Anesthesiology, Vanderbilt University. (Personnel Training)

2014 Naeem Patil, Ph.D. Postdoctoral Fellow. Department of Anesthesiology, Vanderbilt University. (Co-Mentor Period: 2014-Present)

2015 Lynn Sherwood, Vanderbilt Summer Undergraduate Research Program, 6 weeks. **Primary Mentor.**

Chase McAdams, Vanderbilt Research Experience for High School Students Program, 8 weeks. **Primary Mentor.**

2016 Cody Stothers, MSTP student, Department of Anesthesiology, Vanderbilt University. (Co-Mentor Period: 2016-Present)

Jessica Fults, Research Assistant Level 2, Department of Anesthesiology, Vanderbilt Medical Center. **Primary Mentor/Personnel Training** (2016-2017).

2017 Emma Dougherty, Vanderbilt Research Experience for High School Students Program, 10 weeks. **Primary Mentor.**

2018 Jessica Fults, Medical Student, Foundation for Anesthesia Education and Research (FAER) Medical Student Anesthesia Research Fellowship (MSARF) Summer Internship, 8 weeks. **Primary Mentor.**

2019 Allison Owen, Ph.D., Postdoctoral Fellow. **Primary Mentor.** (August 2019 – Present).

Jamie Meegan, Ph.D., Postdoctoral Fellow. Advisory Committee. (August 2019 – Present).

2020 Rachel Hanke, Medical Student. Foundation for Anesthesia Education and Research (FAER) Virtual Medical Student Anesthesia Research Fellowship (MSARF) Summer Program, 8 weeks. **Primary Mentor.**

Noah Hyduke, Medical Student. Foundation for Anesthesia Education and Research (FAER) Virtual Medical Student Anesthesia Research Fellowship (MSARF) Summer Program, 8 weeks. **Primary Mentor.**

Sribava Sharma, Medical Student. Foundation for Anesthesia Education and Research (FAER) Virtual Medical Student Anesthesia Research Fellowship (MSARF) Summer Program, 8 weeks. **Primary Mentor.**

Patents

2017 Sherwood E, Hernandez A, **Bohannon J.** PHOSPHORYLATED HEXAACYL DISACCHARIDES (PHADS) FOR PREVENTING BACTERIAL INFECTIONS. US Patent 62/492,451. Filed May 1, 2017.

Significant Activities

2014 NRSA F32 Informational Panelist, Vanderbilt Postdoctoral Association and Office of Postdoctoral Affairs.

2016 – Present Organizer of Anesthesiology Research Division Works in Progress Seminar Series
 2018 – Present Society of Leukocyte Biology Communications Committee Member
 2019 – Present Edge for Scholars Grant Reviewer. Vanderbilt University, Clinical and Translational Career Development.
 2019 – Present *SHOCK* Journal Editorial Board Member.
 2019 52nd Annual Meeting of the Society for Leukocyte Biology Women and Diversity Workshop Panelist – Advocating for Your Goals: The Art of Saying No, So You Can Say Yes. Boston, MA.
 2020 Faculty reviewer for the Vanderbilt Undergraduate Summer Research Program applications
 2020 Volunteer for COVID response effort, VUMC Molecular Infectious Disease Laboratory (48 hours cumulative volunteer hours)
 2020 Mentor – Foundation for Anesthesia Education and Research (FAER) Virtual Medical Student Anesthesia Research Fellowship (MSARF) Summer Program: Small group mentor for 8 weeks, Journal Club Mentor/Facilitator.
 2020 Swiss National Science Foundation Grant Reviewer – 1 grant July 2020.

Ad hoc Reviewer

Cytokine
 Journal of Leukocyte Biology
 Molecular Medicine Reports
 American Journal of Physiology
 Journal of Molecular Medicine
 Journal of Immunology
 PlosONE
 SHOCK

Other Activities:

Meeting Attendance

2006 The Society for Leukocyte Biology Annual Meeting, San Antonio, TX.
 2007 The 30th Annual Conference on Shock, Baltimore, MD.
 2008 The Society for Leukocyte Biology Annual Conference; Denver, CO.
 2010 The 33rd Annual Conference on Shock, Portland, OR.
 2013 The 36th Annual Conference on Shock, San Diego, CA.
 2014 The 37th Annual Conference on Shock, Charlotte, NC.
 2014 The Society for Leukocyte Biology & International Endotoxin and Innate Immunity Society Annual Meeting, Salt Lake City, UT
 2015 The 38th Annual Conference on Shock, Denver, CO.
 2015 TOLL 2015: Targeting Innate Immunity, Marbella, Spain.
 2016 American Association of Immunologists Annual Meeting: IMMUNOLOGY 2016, Seattle, WA.
 2016 The 39th Annual Conference on Shock, Austin, TX.
 2017 The Innate Immune Memory Conference 2017, Cambridge, UK.
 2017 The 40th Annual Conference on Shock, Ft. Lauderdale, FL.
 2017 The Southeastern Immunology Symposium, Vanderbilt University, Nashville, TN.
 2017 The Society of Leukocyte Biology 50th Anniversary Meeting, Vancouver, BC Canada.
 2018 The 41st Annual Conference on Shock, Scottsdale, AZ.
 2018 The Military Health Systems Research Symposium (MHSRS) 2018, Kissimmee, FL.
 2018 The Anesthesiology Annual Meeting (ASA), October 2018, San Francisco, CA.
 2018 The Society of Leukocyte Biology & International Endotoxin and Innate Immunity Society Joint Meeting, Chandler, AZ.
 2019 The 42nd Annual Conference on Shock, Coronado, CA.
 2019 The Military Health Systems Research Symposium (MHSRS) 2019, Kissimmee, FL.
 2019 4th International Conference on Innate Immune Memory. Nijmegen, Netherlands.
 2019 52nd Annual Meeting of the Society for Leukocyte Biology. Boston, MA.
 2019 Deerfield Institute's Women in Science Translational Research Symposium. New York, NY.